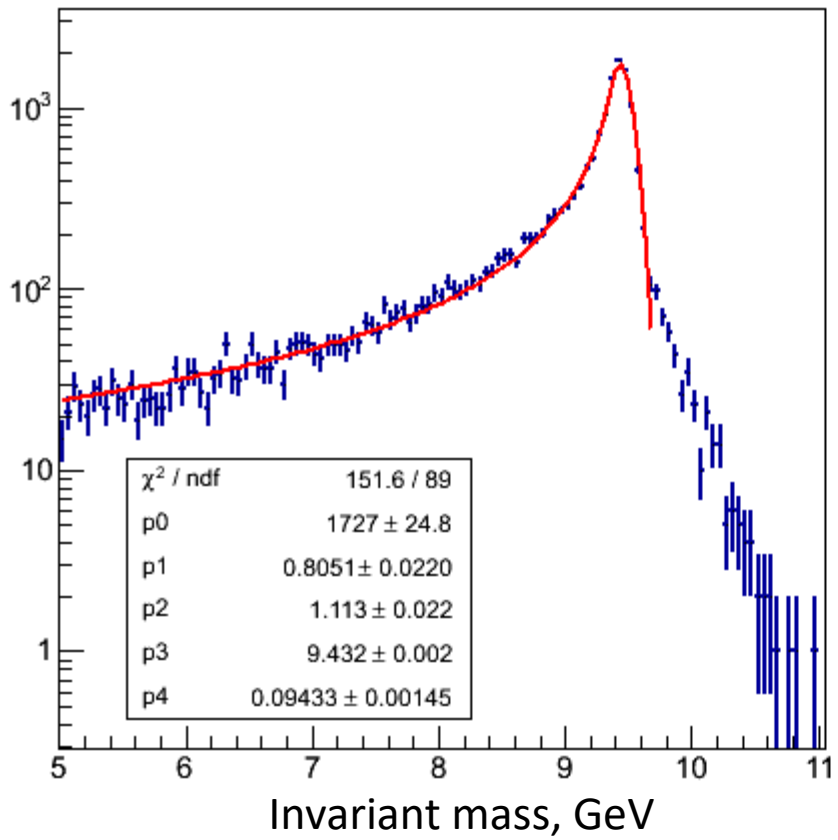
Testing Fun4All_G4_sPHENIX.C with Upsilons

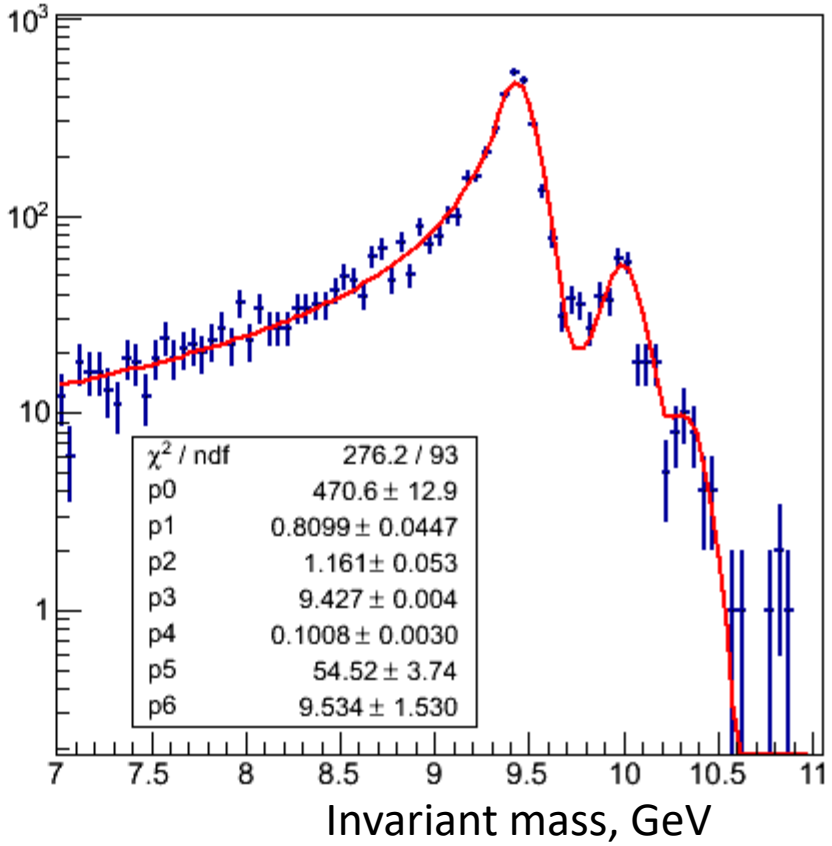
macro and code as of 06/02/2017

Sasha Lebedev (ISU)

Mass resolution



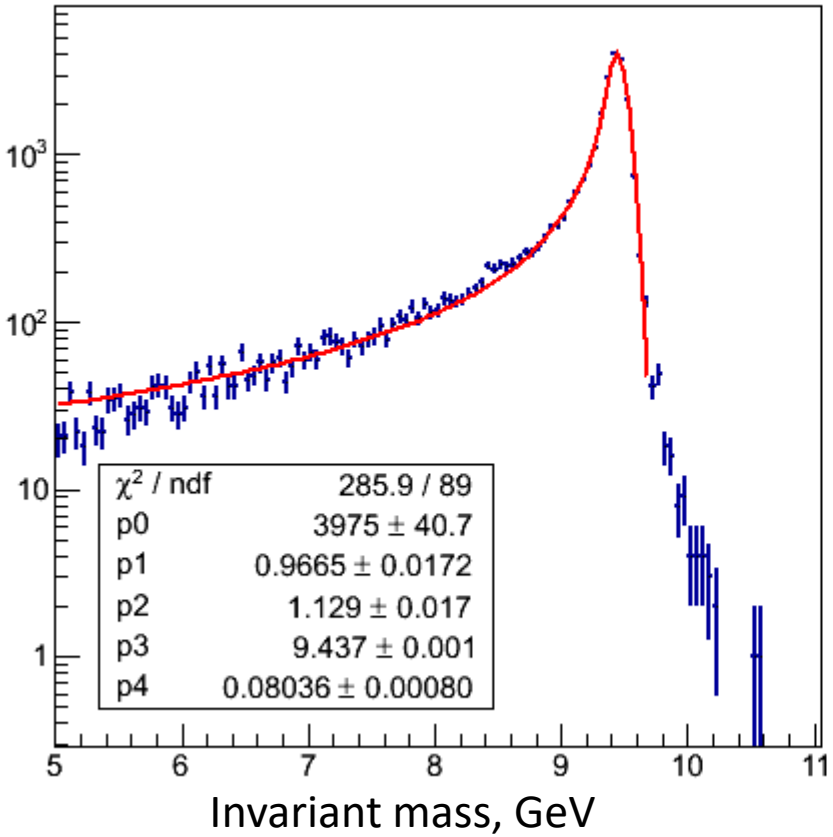
All 3 states with realistic suppression

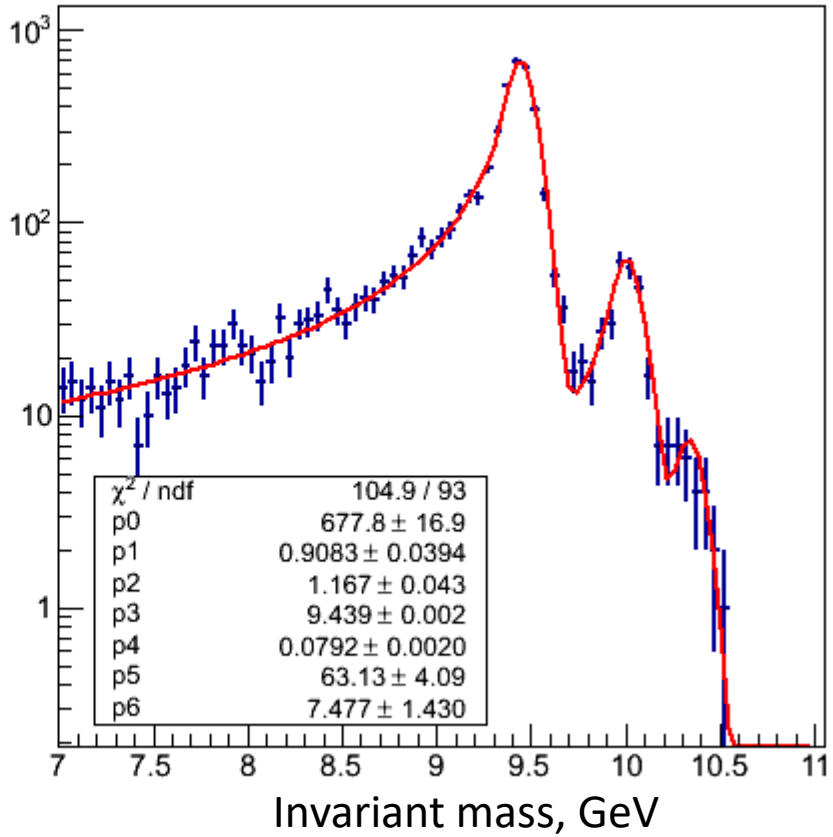


Check out *Fun4All_G4_sPHENIX.C* from repository, replace single particle generator with *PHG4ParticleGeneratorVectorMeson* and run with latest libraries.

Mass resolution (parameter p4) is 94 MeV integrated over all p_T

Mass resolution from Tony

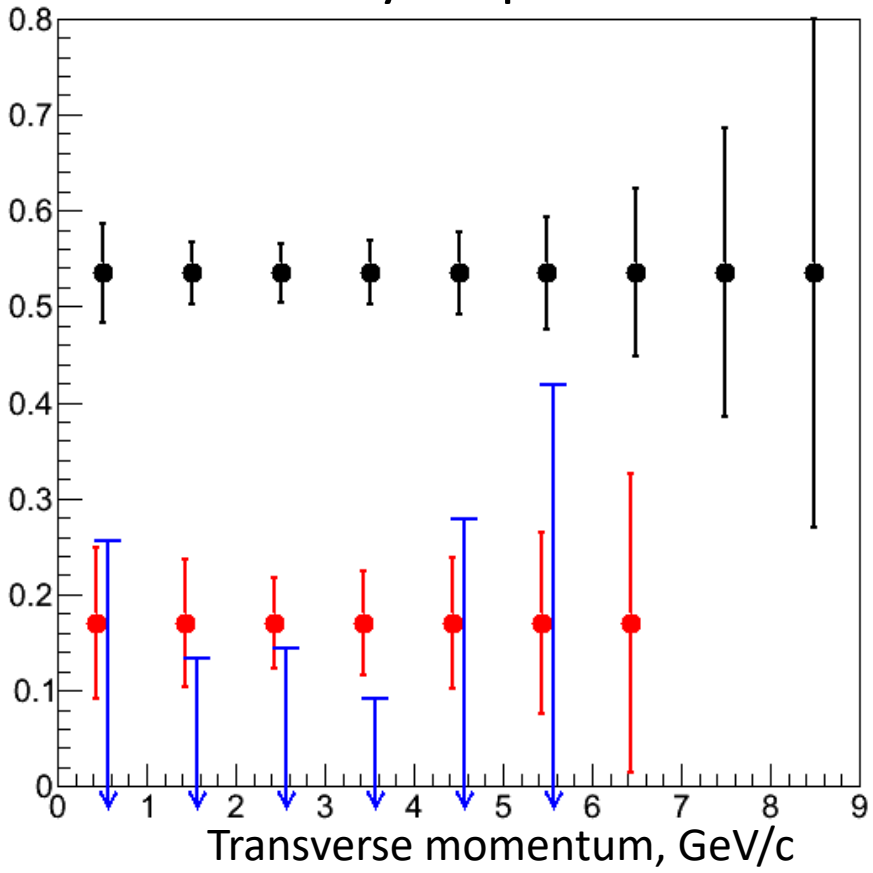




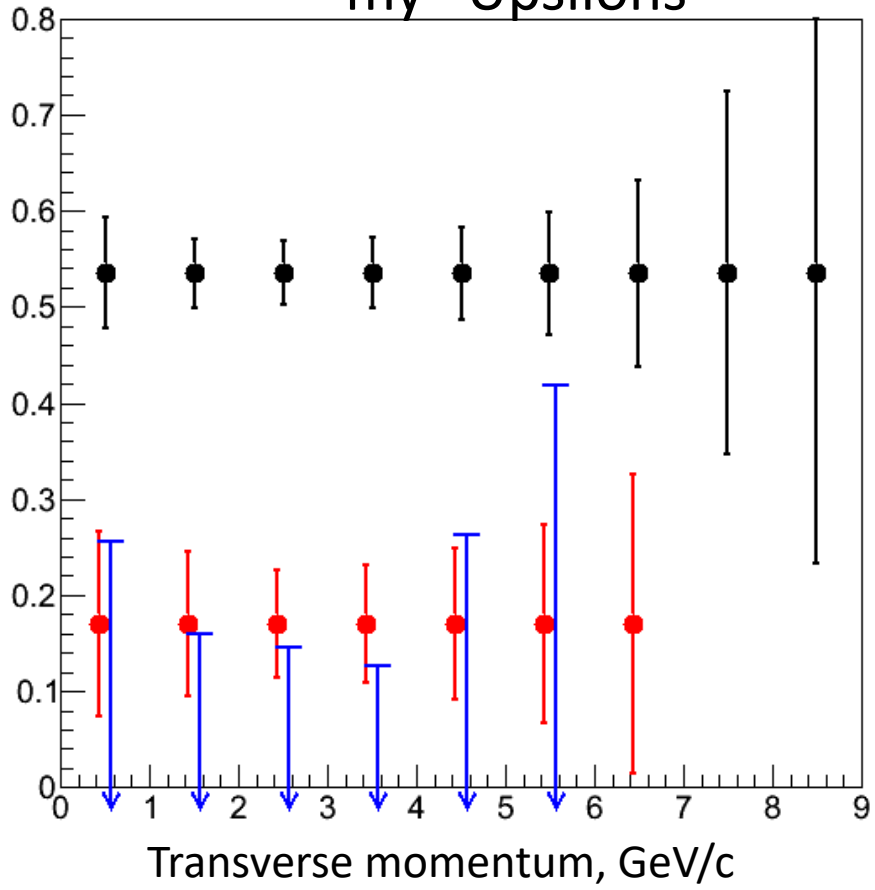
Tony gets 80 MeV mass resolution with his macro (and his code?)
The plot here is made using Tony's evaluation NTuples as of May 31st.

R_{AA}

Tony's Upsilons



"my" Upsilons



We can not reconstruct Y(3S) state anyway because there are too few of them, but even with 94 MeV resolution we can separate 1S and 2S.

Upsilons in Hijing

I tried embedding 5 events in central Hijing events produced recently by Chris using macro in repository (this is after fixing bug with missing dtor).
The job crashed with lots of error messages:

Error in <TDecompChol::Decompose()>: matrix not positive definite
genfit::Exception thrown with excString:
KalmanFitterInfo::calcAverageState: ill-conditioned covariance matrix.
in line: 149 in file: /phenix/u/phnxbld/workarea/sPHENIX/genfit/genfit/core/src/MeasuredStateOnPlane.cc with fatal flag 0